

REMARKS

The Office Action dated May 10, 2006, has been received and carefully noted.

The above amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claim 1 has been amended. No new matter has been added. The amendments to the claims do not narrow the scope of the claims but merely clarify the structure of the base paper. Claims 1, 2, 5, 6, 8, 9, 11-13 and 15-19 are pending and respectfully submitted for consideration.

Entry of Response Proper

Entry of this Amendment is proper under 37 C.F.R. §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issues requiring further search and/or consideration on the part of the Examiner as the Amendment merely clarifies the claimed features of the invention; (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The Amendment is necessary and was not earlier presented because it is made in response to objections raised in the Final Rejection. Entry of the Amendment is thus respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 1, 2, 5, 6, 8, 9, 11 and 16-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito et al. (Japanese Patent Publication No. 10001166, "Saito") in view of Nygard et al. (European Patent Application Publication No. EP 0 908

557 A1, "Nygard"). Saito was cited for disclosing many of the claimed elements of the invention with the exception of softwood kraft pulp of 70% or more in the pulp furnish. Nygard was cited for curing this deficiency. The Office Action further acknowledged that Saito and Nygard do not explicitly teach the claimed aspect ration of tensile strength of the base paper in the range of from 5 to 15 as measured by Japanese Industrial Standard P8113 and took the position that this property is inherent.

The Applicants traverse the rejection and respectfully submit that claims 1, 2, 5, 6, 8, 9, 11 and 16-19 recite subject matter that is neither disclosed nor suggested by the cited references.

Saito discloses a buffer material made of paper having 30 parts NUKP (softwood unbleached kraft pulp), 30 parts LUKP (hardwood unbleached kraft pulp) and 60 parts color high-quality old paper 6 as raw materials of a buffer material.

Nygard discloses stock formed from a mechanical pulp prepared from wood material of the Populus family and from bleached chemical spruce pulp, whereby the amount of the mechanical pulp is 20 to 70 weight % and the amount of the bleached chemical softwood pulp is 80 to 30 weight % of the dry matter of the stock. See the Abstract of Nygard.

The Applicants respectfully submit that the combination of Saito and Nygard fails to disclose or suggest the claimed features of the invention. Claim 1 recites that the aspect ratio of tensile strength of the base paper is in a range from 5 to 15 as measured by Japanese Industrial Standard P 8113, content of the soft wood kraft pulp is 70% or more of the raw material, and that the base paper comprises a cylinder paper-machined paper made by a cylinder paper machine.

Generally, the aspect ratios of tensile strength of a paper produced by a general cylinder paper machine and a paper produced by a Saeki-type cylinder paper machine are about 3.3 (100/30) and 2.7 (100/37), respectively, as disclosed in the attached publication entitled, "History for 50 Years of Special Paper Manufacturing," November 21, 1976). In order to increase the aspect ration of tensile strength, it is necessary to orient the fiber having a high tensile strength in one direction. In the paper string reticulated structure of the present invention, the soft wood pulp in which the tensile strength is higher than that of hard wood pulp is contained at 70% or more to raw material of the base paper. Furthermore, orientation of the fiber is dependent on the process of the paper making, and the present invention is made by a cylinder paper machine that can be orientated higher than in a fourdrinier paper machine because fiber having high tensile strength is orientated in one direction and, consequently, the aspect ratio of tensile strength is increased.

In contrast, as acknowledged in the Office Action, neither Saito nor Nygard disclose or suggest that the aspect ratio of tensile strength of the base paper is set in a range from 5 to 15 as measured by Japanese Industrial Standard P 8113 by containing the soft wood pulp at 70% or more to raw material of the base paper and by using the cylinder paper machine.

The Applicants also submit that it would not be inherent for the combined product of Saito and Nygard to have the claimed aspect ratio because the references do not disclose or suggest the cylinder paper machine that makes the claimed base paper which comprises a cylinder paper-machined paper. The Applicants respectfully submit that the cylinder paper machine imparts distinctive structural characteristics to the final

base paper product which do not exist in products made other types of paper machines, such as the fourdrinier. As Saito and Nygard are silent as to the paper machine, it is not inherent that the references would achieve the claimed aspect ratio and the cylinder paper-machined paper, recited in claim 1.

Claims 12, 13 and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito in view of Nygard as applied to claims 8, 9 and 11 above, and further in view of Phan et al. (U.S. Patent No. 6,136,146, "Phan") or Kearney et al. (U.S. Patent No. 4,225,382, "Kearney"). Claims 12, 13, and 15 depend from claim 1.

The Applicants traverse the rejection and respectfully submit that claims 12, 13 and 15 recite subject matter that is neither disclosed nor suggested by the cited references.

Phan discloses a non-through air dried paper web and method of making such a paper web. The paper web includes at least two regions of different density and at least two regions of different basis weight. See the Abstract of Phan.

Kearney discloses an improved process to produce a tissue which becomes ply-separable during the papermaking process. A first furnish, to be laid adjacent the forming wire, was comprised of 100 percent kraft eucalyptus pulp. The fiber was combined with 4.7 pounds of a 2 percent solution (by weight) of PAREZ 631NC wet strength resin per ton of fiber, and was unrefined. (PAREZ 631NC is a modified polyacrylamide wet strength resin available from the American Cyanamid Company.)

The Applicants respectfully submit that Phan and Kearney fail to cure the deficiencies in the combination of Saito and Nygard, as Phan and Kearney do not

disclose or suggest a base paper comprising a cylinder paper-machined paper, as recited in claim 1.

Under U.S. patent practice, the PTO has the burden under §103 to establish a *prima facie* case of obviousness. In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Both the case law of the Federal Circuit and the PTO itself have made clear that where a modification must be made to the prior art to reject or invalidate a claim under §103, there must be a showing of proper motivation to do so. The mere fact that a prior art reference could arguably be modified to meet the claim is insufficient to establish obviousness. The PTO can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. Id. In order to establish obviousness, there must be a suggestion or motivation in the reference to do so. See also In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984) (prior art could not be turned upside down without motivation to do so); In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998); In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999); In re Lee, 277 F.3d 1338 (Fed. Cir. 2002). The Office Action restates the advantages of the present invention to justify the combination of references. There is, however, nothing in the applied references to evidence the desirability of these advantages in the disclosed structure.

In view of the above, the Applicants respectfully submit that Saito, Nygard, Phan and Kearney, either singly or in combination, fail to disclose or suggest the features of the invention as recited in claim 1. Therefore, the cited references do not support a

prima facie case of obviousness for purposes of a rejection of claim 1 under 35 U.S.C. § 103.

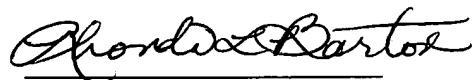
Conclusion

Claims 2, 5, 6, 8, 9, 11-13 and 15-19 depend from claim 1. The Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above. Accordingly, the Applicants respectfully request withdrawal of the objections and rejections, allowance of claims 1, 2, 5, 6, 8, 9, 11-13 and 15-19 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing Attorney Dkt. No. 108421-00080.**

Respectfully submitted,



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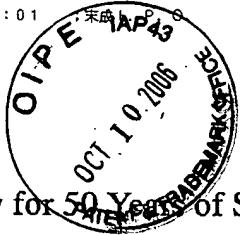
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RLB/elz

Enclosures: History for 50 Years of Special Paper Manufacturing,"
Petition for Extension of Time (two-month)

TECH/458304.1



History for 50 Years of Special Paper Manufacturing (November 21, 1976)

On lines 7 to 11 of page 299

The paper in which strength in a machine direction is desired, such as cable paper, is produced by a cylinder paper machine, so that fiber such as Manila hemp and kraft long fiber is oriented in a machine direction. The aspect ratios of tensile strength of a paper produced by a Saeki style patented cylinder paper machine, a paper produced by a general cylinder paper machine, an OCR paper produced by a No. 13 fourdrinier paper machine, and a Bible paper produced by a No. 6 fourdrinier paper machine, are shown in the following Table.

Table

Brands	Cable Paper	General Cylinder Paper	Saeki Cylinder Paper	Bible Paper	OCR Paper
Tensile Strength in Machine Direction	100	100	100	100	100
Tensile Strength in Cross Direction	20	30	37	58	66

特種製紙五十年史

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条件が与えられた。この紙は後に、キャノン及びソニーにも送るよつになり、四十六年からヨーロー
ターペン紙として納入するよつになった。

12 サ法安定紙

サ法安定性はすべての紙に要求されてゐるやうであるが、特に写真用紙・地図用紙・製図用紙・多色
印刷用紙などないの点を生命とするものである。紙も有機物であり、ある意味では生き物である。気
温・湿度などで安定を失いがちである。特に纖維の方向であるが、製造上やむを得ず発生する機械抄
き和紙、或いは洋紙についてもこの傾向が相当大きく現われてゐる。縦の方向に強さが要求される紙、
例えばケーブル紙の如きは、マニラ麻やクラフト長纖維で綾たたきが並ぶようだ。田綱抄紙機で製造
していく。当社の佐伯式特許田綱抄紙機で抄造した紙、普通の田綱抄紙機で抄造した紙、十三种長纖
抄紙機で抄造したOCR用紙、六号長纖抄紙機で製造したバイブル用紙の縦横強度差を示すと、次表
の如くなる。この差は、吸湿と乾燥による紙の伸縮とほぼ同様な数値を示すことになる。

粘状叩解の紙、例えばエキスフレックス紙・バーチメント紙などは、縦横とも寸法が安定しない。それ
に引き換え、遊離状叩解纖維紙であるナイロン紙・碎木パルプ紙、あるいは吸取紙などは他の紙に比
較して縦横とも寸法が安定している。合成樹脂皮膜についても、皮革についても縦と横の差があり、
一見ホモジニアスに見える鉄材やガラス材の如きにも、製造方向で縦横があり、伸縮差があり、強度
差がある。

銘柄	ケーブル紙	一般田綱	特殊田綱	バイブル紙	OCR用紙
縦方向抗張力	100	100	100	100	100
横方向抗張力	110	100	100	100	100
		0.11	0.11	0.11	0.11
		五八	三七	三七	五八
		六六	六六	六六	六六

条件が与えられた。この紙は後に、キヤノン及びソニーにめぐらすようになり、四十六年からヨーロッパ用紙として納入するようになった。

12 寸法安定紙

ナ送紙定性はすべての紙に要求されてゐるが、特に写真用紙・地図用紙・製図用紙・多色印刷用紙などはこの点を生命とするものである。紙も有機物であり、ある意味では生き物である。気温・湿度などで安定を失いがちである。特に繊維の方向であるが、製造上やむを得ず発生する機械抄き和紙、或いは洋紙についてこの傾向が相当大きくなっている。継の方向に強さが要求される紙、例えばケーブル紙の如きは、マニラ麻やクラフト長繊維で縦に繊維が並ぶようになり、田綱抄紙機で製造してくる。当社の佐伯式特許田綱抄紙機で抄造した紙、普通の田綱抄紙機で抄造した紙、十三号長綱抄紙機で抄造したO.C.R用紙、六号長綱抄紙機で製造したバイブル用紙の縦横強度差を示すと、次表の如くなる。この差は、吸湿と乾燥による紙の伸縮とほぼ同様な数値を示すことになる。

粘状叩解の紙、例えばエキスプレス紙・バーチメント紙などは、縦横とも寸法が安定しない。それに引き換へ、遊離状叩解纖維紙であるナイロン紙・碎木バルブ紙、あるいは吸収紙などは他の紙に比較して縦横とも寸法が安定している。合成樹脂皮膜についても、皮革についても縦と横の差があり、一見ホモジニアスに見える鉄材やガラス材の如きにも、製造方向で縦横があり、伸縮差があり、強度差がある。

特種製紙五十年史

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